



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 10415/1
File Number: DWERVT14017
Duration of Permit: From 8 April 2024 to 8 April 2031

PERMIT HOLDER

Shire of Mundaring

LAND ON WHICH CLEARING IS TO BE DONE

Honeyeater Glade Road Reserve (PIN 1162129), Chidlow

AUTHORISED ACTIVITY

The permit holder must not clear more than nine native trees within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 8 April 2026.

2. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of *native vegetation*;
- (b) minimise the amount of *native vegetation* to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

3. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

4. Directional clearing

The permit holder must:

- (a) conduct *clearing* activities in a slow, progressive manner towards adjacent *native vegetation*; and
- (b) allow a reasonable time for fauna present within the area being cleared to move into adjacent *native vegetation* ahead of the *clearing* activity.

5. Revegetation and rehabilitation – Mitigation planting

- (a) Within 12 months of undertaking clearing authorised under this permit, the permit holder must undertake the *planting* of at least 19 marri (*Corymbia calophylla*) and/or *Banksia grandis* seedlings within the area cross-hatched red in Figure 2 of Schedule 2, within Honeyeater Glade Road reserve (PIN 1162129) Chidlow, ensuring:
 - (i) only *local provenance* seeds, seedlings and propagating material are used for *planting*;
 - (ii) *planting* is undertaken at the *optimal time*; and
 - (iii) *weed* control and watering of *plantings* is undertaken for at least two years post *planting*.
- (b) Within 24 months of undertaking *revegetation* in accordance with condition 5(a) of this permit, the permit holder must:
 - (i) engage an *environmental specialist* to make a determination that at least 19 planted marri (*Corymbia calophylla*) and/or *Banksia grandis* trees will survive;
 - (ii) if the determination made by the *environmental specialist* under condition 5(b)(i) is that at least 19 planted marri (*Corymbia calophylla*) and/or *Banksia grandis* trees will not survive, the permit holder must undertake additional *planting* of native seedlings that will result in at least 19 marri (*Corymbia calophylla*) and/or *Banksia grandis* trees persisting within the area cross-hatched red in Figure 2 of Schedule 2, within Honeyeater Glade Road reserve (PIN 1162129) Chidlow; and
 - (iii) where additional *planting* of marri (*Corymbia calophylla*) and *Banksia grandis* seedlings is undertaken in accordance with condition 5(b)(ii), the permit holder must repeat the activities required by conditions 5(a)(i-iii) and 5(b)(i-ii) of this permit.

6. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 2; (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 3; and (g) actions taken to undertake directional clearing in accordance with condition 4.
2.	In relation to <i>revegetation</i> and <i>rehabilitation</i> pursuant to condition 5.	<ul style="list-style-type: none"> (a) the tree species <i>planted</i>; (b) the date(s) on which <i>planting</i> was undertaken; (c) the location where the <i>planting</i> occurred, recorded using a Global Positional System (GPS) unit set to Geocentric Datum Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings; (d) a description of the <i>planting</i> activities undertaken pursuant to condition 5(a); (e) a copy of the <i>environmental specialist's</i> monitoring report and determination pursuant to condition 5(b)(i); and (f) a description of any residual actions required to be undertaken pursuant to conditions 5(b)(ii)-(iii).

7. Reporting

The permit holder must provide to the *CEO* the records required under condition 6 of this permit when requested by the *CEO*.


DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
environmental specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under the permit, or who is approved by the CEO as a suitable <i>environmental specialist</i> .
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
optimum time	means the period from May to June for undertaking planting or seeding
planting/s/ed	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species
rehabilitate/ed/ion	means the re-establishment of a cover of <i>local provenance</i> native vegetation in an area using methods such as natural regeneration, direct seeding and/or <i>planting</i> , so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
revegetate/ed/ion	means actively managing an area containing native vegetation in order to improve the ecological function of the area
weeds	means any plant – <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

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Temika Mathieson
A/Manager
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

15 March 2024

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1)



Figure 1: Map of the boundary of the area within which clearing may occur

SCHEDULE 2

The boundary of the areas within which *planting* is to occur is shown in hatched red in the map below (Figure 2)



Figure 2: Map of the boundary of the area within which planting must occur.



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10415/1
Permit type:	Area permit
Applicant name:	Shire of Mundaring
Application received:	14 November 2023
Application area:	Nine native trees
Purpose of clearing:	Road upgrades for emergency access and driver safety
Method of clearing:	Mechanical clearing and cutting
Property:	Honeyeater Glade Road reserve (PIN 1162129)
Location (LGA area/s):	Shire of Mundaring
Localities (suburb/s):	Chidlow

1.2. Description of clearing activities

The Shire of Mundaring (the Shire) is proposing to undertake the clearing of native vegetation within the Honeyeater Glade Road reserve (PIN 1162129), Chidlow. The proposed clearing will facilitate road upgrades for emergency access and driver safety. The vegetation proposed to be cleared is nine native trees over three areas within Honeyeater Glade Road reserve (PIN 1162129) (see Figure 1, Section 1.5).

1.3. Decision on application

Decision:	Granted
Decision date:	15 March 2024
Decision area:	Nine native trees, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), site visit notes supplied by the Shire of Mundaring (see Appendix E), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that the purpose of the clearing is to improve emergency access and driver safety.

The assessment identified that the proposed clearing will result in:

- the loss of native vegetation that is suitable foraging habitat for Carnaby's cockatoo, Baudin's cockatoo, and forest red-tailed black cockatoo (black cockatoo species),
- the potential loss of habitat for woylie and south western brush tailed phascogale, and

- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant’s minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined that some of the impacts of the proposed clearing, including direct impacts to individual fauna and the potential to facilitate the introduction of weeds and dieback, can be minimised and managed to unlikely lead to an unacceptable risk to environmental values through permit conditioning. However, impacts to suitable foraging habitat for black cockatoos remained significant even after the application of minimisation and mitigation measures and constituted a significant residual impact.

The Delegated Officer determined that the deliberate planting of a minimum of 19 marri (*Corymbia calophylla*) and *Banksia grandis* trees within Honeyeater Glade Road reserve (PIN 1162129), Chidlow, is sufficient to mitigate the loss of nine trees that provide suitable foraging habitat for black cockatoos and ensure a significant residual impact no longer exists (see Section 3.2.1).

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing,
- a minimum of 19 marri (*Corymbia calophylla*) and/or *Banksia grandis* trees will be required to be planted and maintained within the road reserve, as a mitigation measure for the clearing of nine native trees that provide habitat value,
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback, and
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

1.5. Site map



Figure 1 The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has advised that the following avoidance and mitigation measures have been undertaken (Shire of Mundaring, 2023a).

- Shire of Mundaring contractors are looking to undertake roadworks on a 250m stretch of Honeyeater Glade, Chidlow in 2023. The works include widening of the existing road and have been designed in such a way that impacts on vegetation are minimised. That being said there are some minor impacts on native vegetation as outlined in the attached documents.

DWER have identified that the planting and maintaining of 19 marri (*Corymbia calophylla*) and/or *Banksia grandis* trees, would be required to ensure a significant residual impact to fauna habitat does not remain after the proposed clearing (see Section 3.2.1). The Shire have agreed to the planting of 19 trees within the Honeyeater Glade Road reserve, Chidlow (PIN 1162129).

Considering the above, the Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to biological values (fauna). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (fauna) - Clearing Principles (a) and (b)

Assessment

The application is located within the Jarrah Forest IBRA bioregion. According to available databases a total of 23 conservation significant fauna species have been recorded within the local area (10-kilometre radius of the application area). Of the conservation significant fauna species recorded within the local area, the application area may provide habitat for the following five fauna species:

- *Bettongia penicillata ogilbyi* - woylie, brush-tailed bettong (EN)
- *Calyptorhynchus banksii naso* - forest red-tailed black cockatoo (VU)
- *Phascogale tapoatafa wambenger* - south-western brush-tailed phascogale (CD)
- *Zanda baudinii* - Baudin's cockatoo (EN)
- *Zanda latirostris* - Carnaby's cockatoo (EN)

This assumption is based on habitat requirements, distribution, mapped vegetation type and the condition of the vegetation. Photographs provided by the applicant identified that the vegetation type within the application area was largely consistent with the mapped vegetation types of the area, consisting of open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla* on lateritic uplands in subhumid and semiarid zones (Shire of Mundaring, 2023a).

The applicant may have notification responsibilities under the EPBC Act for impacts to Baudin's black cockatoo, Carnaby's cockatoo, and forest red-tailed black cockatoo and their habitats, as set out in the EPBC Act. The applicant has been advised to contact the federal Department of Climate Change, Energy, the Environment and Water (DCCEW) to discuss EPBC Act referral requirements.

Black cockatoos

Black cockatoos are known to nest in hollows of live and dead trees, including *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah), *Eucalyptus diversicolor* (karri), *Eucalyptus wandoo* (wandoo), *Eucalyptus gomocephala* (tuart), *Eucalyptus rudis* (flooded gum), and other *Eucalyptus* spp. (DAWE, 2022). 'Breeding habitat' for black cockatoos includes trees of these species that either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow, where suitable DBH for nest hollows is 500 millimetres for most tree species (DAWE, 2022). All trees with a DBH of >300mm will be retained as part of the road upgrade works. No trees of a suitable size to contain a hollow suitable for black cockatoo breeding will be cleared (Shire of Mundaring, 2023a).

It is recognised that habitat trees that provide potential breeding habitat may also represent suitable roosting habitat for black cockatoo species. As no trees with a DBH of >300mm will be cleared as part of the application, the proposed clearing is not considered likely to result in the loss of significant roosting habitat for black cockatoos.

Black cockatoos generally breed in woodland or forest but may also breed in former woodland or forest now present as isolated trees (Commonwealth of Australia, 2022). Black cockatoo species are noted to forage on a range of plant species, with the primary foraging resources varying between species (Commonwealth of Australia, 2012). Carnaby's cockatoos forage on the seeds, nuts, and flowers of a variety of plants, including Proteaceous species (*Banksia* spp., *Hakea* spp., and *Grevillea* spp.), as well as *Allocasuarina* and *Eucalyptus* species, marri, and a range of introduced species (Valentine and Stock, 2008). Forest red-tailed black cockatoos feed predominantly on the seeds of marri and jarrah, which comprise approximately 90 per cent of their diet (DEC, 2008). Baudin's cockatoos primarily feed on the seeds of marri but may also forage on the seeds of jarrah and Proteaceous species (DEC, 2008). Given the application area contains marri and *Banksia* trees and occurs within the predicted occurrence range for all the black cockatoo species, the application area provides suitable foraging habitat for black cockatoos.

Food resources within the range of roost and breeding sites are important to sustain populations of black cockatoos, and foraging resources should therefore be viewed in the context of the proximity to the known roosting and breeding sites to the application area. Available databases show that there are 31 records of black cockatoo roost sites within the local area and nine mapped breeding locations. Following breeding, they will flock in search of food, usually within six kilometres of a night roost (Commonwealth of Australia, 2012), but may range up to 20 kilometres. Given the presence of suitable foraging habitat within the known foraging distance to multiple roosting locations, the clearing of the marri and *Banksia* trees is significant.

To mitigate the loss of nine trees that provide foraging habitat for black cockatoo species, the Shire has proposed to plant and maintain 19 marri (*Corymbia calophylla*) and *Banksia grandis* trees within the adjacent road reserve to ensure the clearing will not result in a decline in foraging habitat in the local area. The proposed planting was input into the WA Environmental Offsets Metric Calculator to determine the ratio required to mitigate the loss of nine trees and it was determined that the planting of 19 marri (*Corymbia calophylla*) and *Banksia grandis* trees was a suitable mitigation measure to ensure a significant residual impact does not remain following the mitigation planting. DWER considers the mitigation planting aligns with the *WA Environmental Offsets Policy* (2011) and *WA Environmental Offsets Guideline* (2014).

Woylie, brush-tailed bettong

The woylie or brush-tailed bettong is a small potoroid marsupial which once occupied most of the Australian mainland. It is now concentrated in south west Western Australia with translocated populations in South Australia and New South Wales. Its fragmented habitat varies but is generally associated with tall eucalypt forest and woodland, dense myrtaceous shrubland and kwongan or mallee heath (DEC, 2012). Thickets and other suitable habitat types such as heath, provide refuges for woylies against predators. As the application area lacks an understorey, it is unlikely to provide significant permanent habitat for the woylie, however it may occur occasionally within the application area as it moves through the landscape.

South-western brush-tailed phascogale

The south-western brush-tailed phascogale is an arboreal dasyurid, associated with dry sclerophyll forests and open woodlands that contain hollow-bearing trees, characterised by high canopy cover and connectivity (DEC, 2012a). As the application area contains remnant marri woodland, the application area provides suitable habitat for the south-western brush-tailed phascogale. Noting that the proposed clearing will be limited to smaller trees with a DBH <300 mm, impacts to south-western brush-tailed phascogale will be unlikely. It is possible that the south-western brush-tailed phascogale may occur within the application area, as it moves through the landscape.

Ecological linkage

The application area may function as an ecological linkage for fauna to move between larger remnants of native vegetation within the local area. The ecological linkage values will not likely be severed by the proposed clearing, noting native vegetation will remain within the road reserve. Notwithstanding the above, given that native vegetation remains surrounding the application area, a weed and dieback management condition will be required to assist in mitigating impacts to surrounding vegetation and maintaining ecological linkage values.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of nine trees that provide significant foraging habitat for black cockatoo species and may result in direct impacts to individual fauna if present during the clearing. However, this is not likely to impact on the conservation status of any species that have the potential to occur within the application area.

For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna habitat can be managed through the avoidance, minimisation, and mitigation measures committed to by the applicant and does not constitute a significant residual impact after the implementation of management conditions as specified on the permit.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity will minimise impact to individuals,
- Undertake planting of 19 native *Corymbia calophylla* and/or *Banksia grandis* trees within the adjacent Honeyeater Glade Road reserve, and
- Weed and dieback management measures to assist in mitigating impacts to surrounding vegetation that provides fauna habitat.

3.3. Relevant planning instruments and other matters

The Shire of Mundaring advised DWER that local government approvals are not required, and that the proposed clearing is consistent with the Shire's Local Planning Scheme.

Several Aboriginal sites of significance have been mapped within the local area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
On the 6 February 2024, the applicant provided a response to the formal request for information issued by DWER. This included confirmation of mitigation planting within Honeyeater Glade Road reserve.	See Section 3 for the outline of mitigation planting. See Appendix B for species being impacted by the clearing.

Appendix B. Site characteristics

B.1. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

Characteristic	Details
Local context	<p>The area proposed to be cleared consists of nine native trees within the intensive land use zone of Western Australia. It is surrounded by remnant vegetation and residential dwellings.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 49.52 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area intersects Perth Regional Linkage 110. Noting the extent of the vegetation being cleared, the proposed clearing is not likely to significantly impact this linkage.
Conservation areas	The nearest conservation area is the Woorooloo Regional Park which is located approximately 0.2 kilometres to the south and 0.5 kilometres to the west of the application area.
Vegetation description	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of roadside <i>Corymbia calophylla</i> (marri) and <i>Banksia grandis</i> trees of varying sizes.</p> <p>Representative photos are available in E.</p> <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> Dwellingup D2, which is described as open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i>-<i>Corymbia calophylla</i> on lateritic uplands in subhumid and semiarid zones. (Shepherd et al, 2001) <p>The mapped vegetation type retains approximately 82.5 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Degraded (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p> <p>Representative photos are available in Appendix E.</p>
Climate and landform	<p>Rainfall Mean Annual- 810mm</p> <p>Evapotranspiration Areal Actual- 700mm</p> <p>Topography- 290-305 AHD</p>

Characteristic	Details
Soil description	<p>The soil is mapped as:</p> <ul style="list-style-type: none"> Dwellingup 2 phase (255DpDW2) which is described as very gently to gently undulating terrain (<10%) with well drained, shallow to moderately deep gravelly brownish sands, pale brown sands and earthy overlying lateritic duricrust.
Land degradation risk	<p>The mapped soils within the application area are mapped as having a high risk of subsurface acidification. The depth of the road construction will be negligible, any potential impacts from land degradation will not likely affect the surrounding environment.</p>
Waterbodies and hydrogeography	<p>The desktop assessment and aerial imagery indicated that no wetlands or waterbodies transect the application area. The closest waterbody to the application area is Cookes Brook which is located 0.75 kilometres east of the application area.</p> <p>The application area is mapped within the Swan River Surface Water Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act).</p> <p>Groundwater salinity within the application area is mapped at 1000-3000 milligrams per total dissolved solids.</p>
Flora	<p>The desktop assessment identified that a total of 22 conservation significant flora species have been recorded within the local area, comprising of three threatened flora species and 19 priority flora species (Western Australian Herbarium, 1998-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Meionectes tenuifolia</i> (P3) approximately 2.02 kilometres from the application area.</p> <p>With consideration for the relevant datasets (see Appendix F.1), the habitat preferences and conservation statuses of the aforementioned species, the distribution and extent of existing records and a site visit (Shire of Mundaring, 2023b), the application area is unlikely to provide significant habitat for threatened or priority flora species.</p>
Ecological communities	<p>The desktop assessment identified that there are no conservation significant ecological communities within the application area. The closest mapped ecological community is the Central Northern Darling Scarp Granite Shrubland Community which is listed as a Priority 4 ecological community (PEC) by DBCA in Western Australia, which is located 12 kilometres west of the application area.</p> <p>With consideration for the site characteristics, relevant datasets (see Appendix F.1) and a site visit (Shire of Mundaring, 2023b), the application area is not considered likely to contain vegetation representative of a TEC or PEC.</p>
Fauna	<p>The desktop assessment identified that a total of 23 conservation significant fauna species have been recorded within the local area including 11 threatened fauna species, eight priority fauna species and four other specially protected fauna species (DBCA, 2007-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Calyptorhynchus banksii naso</i>, approximately 0.75 kilometres from the application area</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1) and the habitat preferences of the aforementioned species, and a site visit (Shire of Mundaring, 2023b), the application area is likely to provide significant habitat for conservation significant fauna species and impacts to these species required further consideration (see Section 3.2.1).</p>

B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Jarrah Forest	4506660.25	2399838.15	53.25	1673614.25	37.14
Vegetation complex					
Dwellingup D2*	86128.33	71055.96	82.50	58975.34	68.47
Local area					
10km radius	31799.51	15763.84	49.52	-	-

*Government of Western Australia (2019a)

B.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Bettongia penicillata ogilbyi</i> (woylie, brush-tailed bettong)	EN	Y	Y	0.87	87	Y
<i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo)	VU	Y	Y	0.75	160	Y
<i>Phascogale tapoatafa wambenger</i> (south-western brush-tailed phascogale)	CD	Y	Y	1.87	18	Y
<i>Zanda baudinii</i> (Baudin's cockatoo)	EN	Y	Y	2.36	120*	Y
<i>Zanda latirostris</i> (Carnaby's cockatoo)	EN	Y	Y	2.31	132*	Y
<i>Zanda sp. 'white-tailed black cockatoo'</i>	EN	Y	Y	2.54	64	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

* An additional 64 records of *Zanda sp. 'white-tailed black cockatoo'* (White-tailed black cockatoo) were recorded in the local area, which may comprise either of these species.

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared contains habitat for conservation significant fauna including Carnaby’s cockatoo, Baudin’s cockatoo and forest red-tailed black cockatoo.</p> <p>Noting the proposed clearing is restricted to trees over weeds, no conservation significant flora or vegetation communities will likely occur within the application area.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared contains significant foraging habitat for Carnaby’s cockatoo, Baudin’s cockatoo and forest red-tailed black cockatoo.</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared does not contain species that can indicate a TEC.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The extent of native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not at variance	No
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> Given water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u> The mapped soils are highly susceptible to subsurface acidification. Noting the extent of the application area and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</p> <p><u>Assessment:</u> Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u> The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to contribute to waterlogging.</p>	Not at variance	No

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.

Condition	Description
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E. Photographs of the vegetation



Figure 2. Habitat tree, *Corymbia calophylla*. Visible hollows, no impact with proposed road upgrades, however it is recommended that the tree is fenced off as a tree protection zone (Shire of Mundaring, 2023b).



Figure 3. Native vegetation that will be impacted on the northern side of the cul-de-sac. There are seven native *Corymbia calophylla* trees all under 30cm DBH (Shire of Mundaring, 2023b).



Figure 4. Weeds along the verge, no concerns with clearing but will require weed control after the completion of road works (Shire of Mundaring, 2023b).



Figure 5. Native vegetation on the south side of the road verge that may be impacted. This includes *Corymbia calophylla* under 30 cm DBH and *Banksia grandis* (Shire of Mundaring, 2023b).



Figure 6. Planted native vegetation, *Calothamnus rupestris* and *Acacia saligna*, proposed trim but may need to be removed (Shire of Mundaring, 2023b).



Figure 7. Planted native vegetation, *Calothamnus rupestris* and *Acacia saligna*, proposed trim but may need to be removed (Shire of Mundaring, 2023b).



Figure 8. Native trees that will only require pruning of lower branches (Shire of Mundaring, 2023b).



Figure 9. Planted native vegetation, proposed trim but may need to be removed (Shire of Mundaring, 2023b).



Figure 10. *Corymbia maculata* growing near road drainage, These species are introduced eucalyptus and removal is supported (Shire of Mundaring, 2023b).



Figure 11. Non-native eucalyptus on a lean. As it is not native and weedy, there are no issues with removing (Shire of Mundaring, 2023b).



Figure 12. *Corymbia calophylla* located near the south west corner of Honeyeater Glade. No impact with proposed works. However there is some decline in the canopy which may be Marri Canker, which may require pruning (Shire of Mundaring, 2023b).



Figure 13. View of sightlines looking east towards Keenan Road, some minor trimming is proposed (Shire of Mundaring, 2023b).

Appendix F. Sources of information

F.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)

- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

F.2. References

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